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<input type="checkbox"/>	L14		L13 and (user with interface or user near interface or user adj interface)	436
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L16: Entry 25 of 59

File: PGPB

Dec 13, 2001

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REPRESENTATIVE-FIGURES: 9

## ABSTRACT:

A self-service terminal (14 or 114 or 214) and a system (10, 100, 200) including a plurality of networked self-service terminals are described. Each terminal (14, 114, 214) has a simple user interface. In one type of terminal (114 or 214), the user interface consists of a dispense area. In another type of terminal (14), the user interface consists of a dispense area (40) and a communication port (38). In one of the systems (10) a user is able to execute a transaction using a portable communication device (24 or 26) implementing a local wireless technology. In the

other systems (100 or 200) a user is able to execute a transaction using a cellular network.

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DOCUMENT-IDENTIFIER: US 20010051922 A1

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Abstract Paragraph:

A self-service terminal (14 or 114 or 214) and a system (10, 100, 200) including a plurality of networked self-service terminals are described. Each terminal (14, 114, 214) has a simple user interface. In one type of terminal (114 or 214), the user interface consists of a dispense area. In another type of terminal (14), the user interface consists of a dispense area (40) and a communication port (38). In one of the systems (10) a user is able to execute a transaction using a portable communication device (24 or 26) implementing a local wireless technology. In the other systems (100 or 200) a user is able to execute a transaction using a cellular network.

Summary of Invention Paragraph:

[0001] The present invention relates to a self-service terminal (SST), an SST system, and to a method of operating an SST. In particular, the invention relates to SSTs in the form of automated teller machines (ATMs), and especially low cost ATMs.

Summary of Invention Paragraph:

[0002] ATMs are widely used for dispensing cash and other valuable media. Conventional ATMs provide a user interface that includes a plurality of user interface elements, such as a display and an encrypting keypad, located within a molded fascia.

Summary of Invention Paragraph:

[0003] The display is used to present the user with screens that assist the user in navigating through a transaction. The screens are also used to reassure the user by providing visual feedback about the status of the transaction. To further assist users, a conventional display includes function display keys (FDKs) located on opposite sides of the display. The FDKs align with selectable options that are presented on a screen, so that a user can select an option using an FDK that aligns with a graphical representation of that option. Conventional ATM displays may be monochrome or full color displays.

Summary of Invention Paragraph:

[0005] The ATM user interface may also include an audio facility for providing the user with audio information, such as audible transaction information or advertisements.

Summary of Invention Paragraph:

[0006] As these user interface elements are expensive, the cost of ATMs including these elements is relatively high. This reduces the number of ATMs that a financial institution is willing to deploy.

Summary of Invention Paragraph:

[0008] According to a first aspect of the present invention there is provided a self-service terminal having a user interface characterized in that the user interface consists essentially of a communication port and a dispense area.

Summary of Invention Paragraph:

[0009] By virtue of this aspect of the invention an SST is provided that does not require a display or a keypad. The SST is intended to be used by a user having a portable communication device such as a personal digital assistant (PDA) or a cellular telephone. By using the PDA or cellular telephone, the user is providing his/her own user interface. The PDA may be a Psion (trade mark) Series 5 PDA, a 3-Com (trade mark) Palm IIIx (trade mark) PDA, or such like. The cellular telephone may be a conventional cellular telephone.

Summary of Invention Paragraph:

[0010] In one embodiment, the user interface consists of a communication port and a dispense area.

Summary of Invention Paragraph:

[0011] The communication port may be accessible using a local wireless technology, such as Bluetooth (trade mark), an IrDA-compliant (Infra-red Data Association) protocol, or such like. This has the advantage that the user must be located in the vicinity of the communication port (and therefore in the vicinity of the terminal) to operate the terminal. Alternatively, the communication port may be accessible using wireless telephony.

Summary of Invention Paragraph:

[0014] Preferably, the communication port is operable to transmit transaction information to the user's portable communication device so that the user is provided with feedback about the transaction, such as status information. The information may be in audio form or in text form.

Summary of Invention Paragraph:

[0015] According to a second aspect of the present invention there is provided a self-service terminal having a dispenser and a user interface, characterized in that the user interface consists essentially of a dispense area.

Summary of Invention Paragraph:

[0016] Preferably, the terminal includes a network connection for communicating with a central controller located remotely from the terminal, whereby, a user is able to conduct a transaction by accessing the central controller, and the central controller is operable to activate the dispenser via the network connection. The network connection may use cables or it may be a wireless connection.

Summary of Invention Paragraph:

[0017] By virtue of this aspect of the invention, a user is able to access a central controller using a portable communication device. The user is able to prepare a transaction using the communication device and to receive the dispensed media from the terminal. This has the advantage that the terminal only has to interact with a central controller, not with a user's communication device.

Summary of Invention Paragraph:

[0018] According to a third aspect of the present invention there is provided a self-service terminal network comprising a central controller and a plurality of self-service terminals, where each terminal includes a wireless communication port for receiving a request from a user for dispensing media, and a network connection for transmitting the request to the central controller, where the central controller is operable to authorize the request and to instruct the terminal to dispense valuable media to implement the request.

Summary of Invention Paragraph:

[0028] The method may include the further step of advising the customer of a service charge for the cash withdrawal prior to authorizing the transaction.

Summary of Invention Paragraph:

[0031] For each transaction executed by a user, the system may credit an account held by the user with a transaction fee. This fee may be used to offset the cost of ownership of the wireless communicator.

Summary of Invention Paragraph:

[0032] According to an eighth aspect of the present invention there is provided a telecommunications banking system comprising a plurality of cash dispensing mechanisms, each mechanism having an associated transceiver with a unique telephone number, and each mechanism being accessible by a wireless communication device issued to a user; whereby, in use, a user dials a telephone number associated with that dispenser using the wireless communicator, enters a cash withdrawal transaction using the wireless communicator, receives the requested cash from the dispenser, and is charged a transaction fee by the banking system.

Summary of Invention Paragraph:

[0039] According to a thirteenth aspect of the present invention there is provided a transceiver for installing in an SST, where the transceiver is operable to conduct wireless communication with a user of the SST, and the transceiver is adapted to convey transactions to the SST, so that when the transceiver is installed in an SST a user can execute a transaction on the SST using a wireless communication device.

Summary of Invention Paragraph:

[0040] According to a fourteenth aspect of the present invention there is provided a method of operating a self-service terminal network, the method comprising the steps of: providing a user with a financial program for executing on a portable communication device to provide a programmed device; providing a plurality of terminals operable to interact with such a programmed device; receiving a transaction from such a programmed device; authorizing the received transaction; and fulfilling the authorized transaction.

Summary of Invention Paragraph:

[0041] According to a fifteenth aspect of the present invention there is provided a method of dispensing cash, the method comprising the steps of: providing a telephone number for a user to dial from a wireless handset; identifying the wireless handset; requesting entry of a personal identification number via the handset; dispensing a requested amount of cash; and charging the transaction to an account relating to the handset.

Summary of Invention Paragraph:

[0042] According to a sixteenth aspect of the present invention there is provided a self-service terminal operable to dispense valuable media in response to a request received from a wireless communication device.

Summary of Invention Paragraph:

[0043] The terminal may be operable in two modes, whereby in the first mode a user may enter information using a user interface located on the terminal, and in the second mode a user may enter information using a portable user interface. The portable user interface may be a wireless telephone.

Summary of Invention Paragraph:

[0044] According to a seventeenth aspect of the invention there is provided a method of operating a self-service terminal, the method comprising the steps of: providing a user with a plurality of operating modes; detecting selection of one of the operating modes; and processing a transaction entered using the selected mode.

Summary of Invention Paragraph:

[0045] One operating mode may involve entering data using a user interface located on the terminal. Another operating mode may involve entering data using a wireless

communication device.

Summary of Invention Paragraph:

[0046] It will now be appreciated that SSTs and networks of SSTs according to the present invention have a number of advantages. As each user carries his/her own user interface it is easier for each user to personalize his/her user interface. In addition, a user is able to use any interface they desire to communicate with a terminal. This means that a disabled person is able to use a user interface that is adapted for their specific disability, for example a blind person is able to use an audio interface, a deaf person is able to use a visual interface, and such like. As the terminals use few user interface elements, the cost of buying and maintaining each ATM is reduced, thereby making it more cost effective to deploy large numbers of these terminals. As there are fewer user interface elements on the terminals, they are more resistant to attack by vandals. As no graphical display is required, the terminals are able to use inexpensive PC cores; that is, the PC core does not require the high processing power or the large amount of memory associated with high resolution video displays.

Brief Description of Drawings Paragraph:

[0048] FIG. 1 is a block diagram of a self-service terminal system in accordance with one embodiment of the invention;

Brief Description of Drawings Paragraph:

[0054] FIG. 7 is a block diagram of a self-service terminal system in accordance with another embodiment of the invention;

Brief Description of Drawings Paragraph:

[0056] FIG. 9 is a block diagram of a self-service terminal system in accordance with yet another embodiment of the invention.

Detail Description Paragraph:

[0057] Referring now to FIG. 1, which is a block diagram of a self-service terminal system 10 in accordance with one embodiment of the present invention, the system 10 comprises a conventional host 12 interconnected to a plurality of SSTs 14 (only two are shown) by a network 16. The SSTs 14 are ATMs. As is well known in the art, the host 12 includes an authorization facility 18 and a back-office facility 20. The ATMs 14 are physically remote from each other, but are shown in proximity in FIG. 1 for clarity.

Detail Description Paragraph:

[0059] FIG. 2 is a schematic diagram of one of the ATMs 14 of FIG. 1. The ATM 14 has a safe 28 housing a processing module 30 (shown in broken line) coupled to a cash dispenser 32 (shown in broken line) and a conventional network connection 34 (also shown in broken line). The ATM 14 has a simple user interface 36 consisting of a communications port 38 coupled to the processor 30, and a dispense area 40 in the form of a tray for receiving bank notes. The port 38 is an IrDA compliant module for receiving and transmitting information in infra-red format. The network connection 34 is coupled to the network 16 (FIG. 1) by a cable 42.

Detail Description Paragraph:

[0060] FIG. 3 illustrates the architecture of PDA 24. PDA 24 comprises a controller 52 and associated volatile memory 54 and non-volatile memory 56, a touch-sensitive display 58, a serial communication port 60 for receiving a connector, and a wireless communication port 62 in the form of an IrDA-compliant infra-red port. The controller 52 is responsible for the operation of the device 24, and is coupled to the display 58, serial port 60, and IR port 62. In use, the controller 52 loads a simple operating system 66 and an ATM transaction program 68 into the volatile memory 54.

Detail Description Paragraph:

[0061] The transaction program 68 provides a user of the PDA 24 with a user interface for preparing transactions for executing on the ATM 14 and also provides an encryption/decryption facility for encrypting any transactions to be transmitted or stored.

Detail Description Paragraph:

[0062] Referring now to FIG. 4, when the transaction program 68 is selected by a user of the PDA 24, the PDA 24 displays a series of screens in a similar way to a conventional ATM display. A typical screen is shown in FIG. 4, which shows various cash withdrawal options. The sequence of screens and the content of each screen may be customized by the user. As the user carries his/her own graphical user interface, no graphical user interface is required on ATM 14a.

Detail Description Paragraph:

[0063] Referring now to FIG. 5, when a user 70 wishes to withdraw cash from ATM 14a, the user 70 approaches the ATM 14a, executes the transaction program 68 (FIG. 3) on his/her PDA 24, and prepares a transaction. The user 70 prepares a transaction by entering his/her PIN using display 58 (FIG. 3) and selecting a button 72 (FIG. 4) representing an amount to be withdrawn, such as twenty pounds. The controller 52 encrypts the prepared transaction using the encryption facility in the transaction program 68.

Detail Description Paragraph:

[0064] The user 70 then aligns the IR port 62 (FIG. 3) with the communications port 38 in the user interface 36 of the ATM 14. The user transmits the encrypted prepared transaction to the ATM 14 using the IR port 62 and communications port 38, as illustrated by broken line 74.

Detail Description Paragraph:

[0065] On receiving the encrypted prepared transaction, the IrDA port 38 conveys the transmission to the processor 30. The processor 30 decrypts the received transaction and sends the received PIN and transaction request to the host 12 (FIG. 1) for authorization. The processor 30 then conveys a message to the PDA 24 informing the user 70 that the request is being authorized. On receipt of authorization from the host 12, the processor 30 instructs the cash dispenser 32 to dispense the requested cash (twenty pounds). The dispenser 32 dispenses the cash to the dispense tray 40, and the processor 30 transmits a message to the PDA 24 indicating that the user's cash has been dispensed. The user 70 then removes the dispensed cash to complete the transaction.

Detail Description Paragraph:

[0066] If the transaction is not authorized or if the cash cannot be dispensed, then the processor 30 transmits a message to the PDA 24 to inform the user 70 that the transaction cannot be executed. This provides the user 70 with feedback relating to the status and progress of the transaction being executed.

Detail Description Paragraph:

[0068] To withdraw cash from an ATM 14 using cell phone 26, the user 70 approaches the ATM 14 and executes a cell phone transaction program (not shown). This transaction program may be resident on the phone 26 or may be downloaded from a Web site using the phone's microbrowser. In a similar way to transaction program 68 (FIG. 3), the cell phone transaction program provides the user 70 with a user interface for preparing a transaction, and also provides an encryption facility for encrypting the transaction.

Detail Description Paragraph:

[0069] The user 70 prepares a transaction using this cell phone program and executes the transaction by aligning the IrDA port 90 with the ATM's port 38 (FIG. 1) and transmitting the prepared transaction.

Detail Description Paragraph:

[0070] Referring now to FIG. 7, which is a block diagram of a self-service terminal system 100 in accordance with another embodiment of the invention, the system 100 includes a host 112 interconnected to a plurality of SSTs 114 (only two are shown) by a network 116. The SSTs 114 are ATMs. The host 112 includes an authorization facility 118, a back-office facility 120, and a plurality of transceivers 122 (only one of which is shown) arranged to be in electrical communication with the host 112. Each transceiver 122 is associated with an ATM 114 and is operable to transmit and receive signals to and from a cellular network and/or a landline connection.

Detail Description Paragraph:

[0077] Prior to authorizing the transaction, the transceiver 122 may advise the user (via cell phone 126) of a transaction charge that will be levied for the transaction, and may request the user to confirm that he/she still wishes to execute the transaction. If within a pre-set time, such as twenty seconds, the user does not confirm that he/she wishes the transaction to be executed then the transaction may be cancelled. If the user does confirm that he/she wishes to proceed with the transaction, then the transceiver 122 applies a charge to an account held by the user. This may be a telecommunications account for the cellular telephone, or it may be a bank account. For each transaction, the transceiver 122 may credit a user's telecommunications account with free time, for example, one minute for each pound that has been withdrawn.

Detail Description Paragraph:

[0078] It will be appreciated that in this embodiment the ATMs 114 have a user interface consisting of a dispense area; whereas, in the FIG. 1 embodiment, the ATMs 14 have a user interface consisting of a dispense area and a communication port.

Detail Description Paragraph:

[0081] In use, an authorized customer uses a cellular telephone 126 (which is identical to that described with reference to FIGS. 7 and 8) to dial the telephone number of one of the transceivers 222a (each transceiver 222 has a different pre-determined telephone number). The transceiver 222a operates in substantially the same way as described for the FIG. 7 embodiment, however, to obtain authorization for a transaction, the transceiver 222a transmits information across network 216 to the host 212, and receives authorization from the host 212 via network 216.

Detail Description Paragraph:

[0082] It will be appreciated that the above embodiments all have the advantage that an ATM is provided that requires a very simple and inexpensive user interface. This greatly reduces the cost of the ATM, as the user interface is generally very expensive. It also reduces the complexity of the ATM, which reduces the maintenance and increases the reliability of the ATM.

Detail Description Paragraph:

[0083] Various modifications may be made to the above described embodiment within the scope of the invention, for example, any convenient wireless communication device may be used, such as a dedicated internet access device. In other embodiments, an ATM may include a card reader. In other embodiments, a wireless communication device may include a Smart card reader for receiving a Smart card, where the Smart card may be used to identify the user of the device. In other embodiments, a communications device may use Bluetooth (trade mark) technology to communicate with an ATM. In other embodiments, the media dispensed may include stamps, telephone cards, ski passes, or such like. In other embodiments, the transceivers 122 may be implemented by a call center. In other embodiments, the cell phone may include a PIN for authorizing withdrawals, where the PIN is stored in the SIM (subscriber identity module), and may be accessed only when the user enters a code. In other embodiments, an ATM may include a user interface additionally comprising an encrypting keypad and a display, and the ATM may be

operable in two modes, so that in a first mode a user may enter information using the keypad; and in a second mode a user may enter information using a wireless communication device such as a cellular telephone.

CLAIMS:

1. A self-service terminal comprising: a user interface consisting essentially of a communication port and a dispense area.
2. A terminal according to claim 1, wherein the communication port is accessible using a local wireless technology.
3. A terminal according to claim 1, wherein the communication port is operable to transmit transaction information to a user's portable communication device to provide a user with feedback about a transaction.
4. A self-service terminal comprising: a dispenser; and a user interface consisting essentially of a dispense area.
5. A terminal according to claim 4, further comprising a network connection for communicating with a central controller located remotely from the terminal to allow a user to conduct a transaction by accessing the central controller, the dispenser being activatable via the network connection in response to the central controller.
6. A self-service terminal network comprising: a plurality of self-service terminals, each terminal including a wireless communication port for receiving a request to dispense media to a user; and a central controller operable to authorize a request and to instruct the respective terminal to dispense valuable media to fulfil the request.
21. A banking system according to claim 18, wherein for each transaction executed by a user, the system credits an account held by the user with a transaction fee.
22. A telecommunications banking system comprising: a plurality of cash dispensing mechanisms, each mechanism having an associated telephone number, each mechanism being accessible by a wireless communication device issued to a user; whereby, in use, a user dials a telephone number associated with that cash dispensing mechanism using a wireless communication device, enters a cash withdrawal transaction using the wireless communication device, receives the requested cash from the cash dispensing mechanism, and is charged a transaction fee by the banking system.
28. A transceiver for installing in a self-service terminal, the transceiver comprising: means for conducting wireless communication with a user of the self-service terminal; and means for conveying transactions to the self-service terminal such that when the transceiver is installed in the self-service terminal a user can execute a transaction on the self-service terminal using a wireless communication device.
29. A method of operating a self-service terminal network, the method comprising the steps of: providing a user with a financial program for executing on a portable communication device to provide a programmed device; providing a plurality of terminals operable to interact with such a programmed device; receiving a transaction from such a programmed device; authorizing the received transaction; and fulfilling the authorized transaction.
30. A self-service terminal comprising: means for receiving a request from a wireless communication device; and means for dispensing valuable media in response to a request received from a wireless communication device.

31. A terminal according to claim 30, further comprising means for enabling the terminal to be operable in a first mode in which a user may enter information using a user interface located on the terminal, and in a second mode in which a user may enter information using a portable user interface.

32. A method of operating a self-service terminal, the method comprising the steps of: providing a user with a plurality of operating modes; detecting selection of one of the operating modes; and processing a transaction entered using the selected mode.

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